PLANNED RESIDENTIAL COMMUNITY (PRC) PLAN

RESTON HOSPITAL CAMPUS

HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA
FEBRUARY 13, 2009

PROJECT TEAM

APPLICANT:
RESTON HOSPITAL CENTER
1850 TOWN CENTER PARKWAY
RESTON, VA 20190

CIVIL ENGINEER/ PLANNER/

LANDSCAPE ARCHITECT:

ADTEK ENGINEERS, INC.

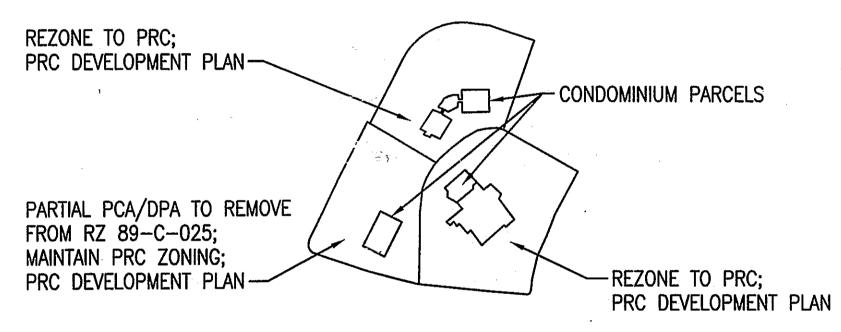
3251 OLD LEE HIGHWAY, SUITE 405

FAIRFAX, VA 22030

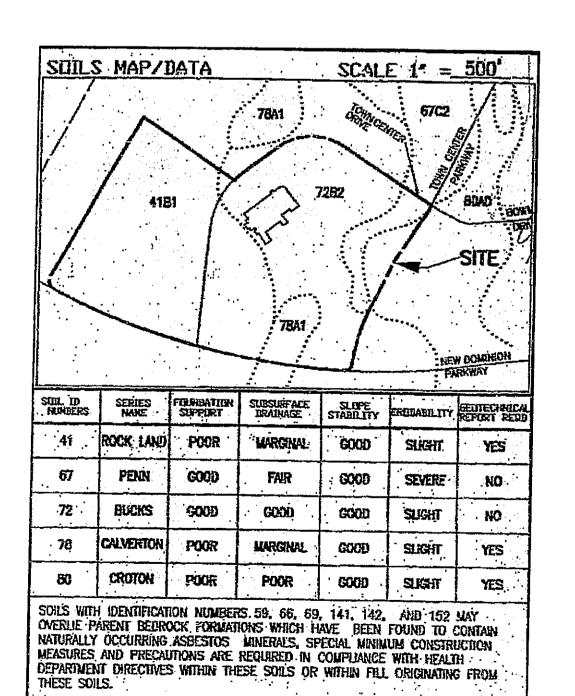
ARCHITECT:
EARL SWENSSON ASSOCIATES
RICHARD L. MILLER, ARCHITECT
2100 WEST END AVENUE
VANDERBILT PLAZA, SUITE 1200
NASHVILLE, TN 37203

LAND USE ATTORNEY:
COOLEY GODWARD KRONISH, LLP
RESTON TOWN CENTER
11951 FREEDOM DRIVE
RESTON, VA 20190

TRAFFIC ENGINEER:
GOROVE/SLADE ASSOCIATES, INC.
3914 CENTREVILLE ROAD, SUITE 330
CHANTILLY, VA 20151

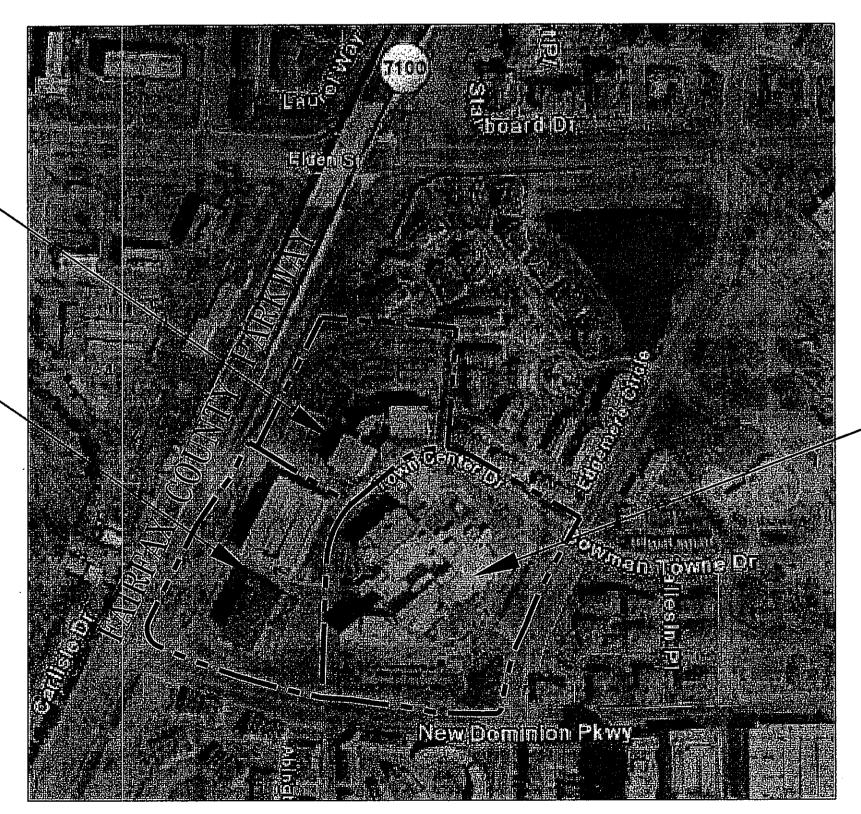


PARCEL DIAGRAM SCALE 1"=1000'



EXISTING I-5 7.50± A.C. TO BE REZONED TO PRC-

EXISTING PRC 9.33± A.C.—
TO REMAIN PRC



- EXISTING C-3 14.81± A.C. TO BE REZONED TO PRC

	SHEET INDEX
SHEET NUMBER	SHEET TITLE
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14	ARCHITECTURAL EXHIBIT

Application No. PRC 2009-HM-014
Staff S. Lin

APPROVED DEVELOPMENT PLAN

(DP) (GDP) (CDP) (FDP) PRC

SEE PROFFERS DATED 1/12/10 PRC p.c. 1/25/10

Date of BOS (PC) approval 3/23/10

Sheet 1 of 144

CRESENT PARK DR.
SUNSET HILLS
RD. RT. 675

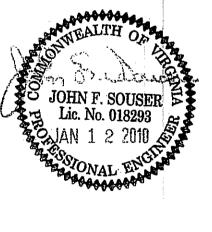
DULLES AIRPORT
ACCESS
RD./ DULLES TOLL RD.
RT. 267

VICINITY MAP
SCALE=1"=2000'

CWIL, STRUCTURAL, SPECIALTY ENGINEERING, & LANDSCAPE ARCHITECTUR
3251 Old Lee Highway, Suite 405
Fairfax, Virginia 22030
Phone: 703-691-4040 Fax: 703-691-40

Earl Swensson Associate 2100 West End Avenue Vanderbilt Plaza Nashville, Tennessee 37203

מוכוו וויוספיים	FLOOR AREA REVISION	RESPONSE TO COUNTY COMMENTS	RESPONSE TO COUNTY COMMENTS	RESPONSE TO COUNTY COMMENTS				
NEVISION DAIL	04/08/09	05/21/09	60/1/60	10/14/09				
					,			•



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CAMPUS	RESTON, VA		SHEET#			

HOSPITAL

RESTON

TER MILL DISTRICT

COVER SHEET

DATE: 02/13/09

RESTON HOSPITAL CAMPUS

- 1. LOCATION: FAIRFAX COUNTY TAX MAP 17-1-((1)) PARCELS 3H1, 15B, 17, AND 17-1-((19)) PARCELS B, C5, C6, 100, 201, 206, 207, 208, 209, 210, 301, 303, 308A, 308B, 310, 311A, 314A, 400, 406, 409, 410, 411A, 412A, AND 17-1-((14) PARCELS 101, 103, 105, 110,111, 113, 115, 116,117,118, 120, 201, 202, 205, 206, 207, 209, 210, 212, 214, 215, 218, 220A, 222, 301, 303, 305, 306, 307, 308, 309, 310, 311, 312, 313, 315, 316, 317, 319, 320, 401A, 402, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 418, 419, 420, AND 17-1-((28)) PARCELS 100, 120, 130, 140, 150, 160, 180, 210, 220, 220A, 225, 230, 240, 250, 255, 260, 270, 280, 300, 300A, 310, 335, 340, 350 AND 460.
- BOUNDARY AND TOPOGRAPHIC INFORMATION: BOUNDARY INFORMATION FOR THE SUBJECT SITE IS TAKEN FROM AN ALTA SURVEY PREPARED BY B.W. SMITH IN FALL OF 2008 AND DOES REFLECT TITLE INFORMATION. TOPOGRAPHIC INFORMATION PRESENTED IS AT A ONE-FOOT CONTOUR INTERVAL AND IS BASED ON AERIAL MAPPING.
- MINOR MODIFICATIONS MAY BE PERMITTED WHEN NECESSITATED BY FINAL SITE DESIGN AND ENGINEERING AS DETERMINED BY THE DIRECTOR OF THE ZONING EVALUATION DIVISION, DEPARTMENT OF PLANNING AND ZONING.
- 4. WATER AND SEWER: THE PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
- 5. STORMWATER MANAGEMENT/ BEST MANAGEMENT PRACTICES (SWM/BMP): SEE PRELIMINARY STORMWATER MANAGEMENT PLAN, PRELIMINARY BEST MANAGEMENT PRACTICES PLAN AND OUTFALL ANALYSIS PLAN.
- UTILITY EASEMENTS: TO THE BEST OF THE APPLICANTS KNOWLEDGE AND BELIEF, THE FOLLOWING EASEMENTS ARE MAJOR UNDERGROUND UTILITY EASEMENTS ON THE RESTON HOSPITAL CAMPUS:
- FAIRFAX COUNTY WATER AUTHORITY RECORDED IN DEED BOOK 5403 PAGE 1502. - VIRGINIA ELECTRIC AND POWER COMPANY RECORDED IN DEED BOOK 5697 PAGE 27. - COLONIAL PIPELINE COMPANY RECORDED IN DEED BOOK 2671 PAGE 389. - ATLANTIC SEABOARD CORPORATION RECORDED IN DEED BOOK 3079 PAGE 459.
- 7. PUBLIC IMPROVEMENTS: NO PUBLIC IMPROVEMENTS ARE PROPOSED WITH THIS PLAN.
- 8. CLEARING AND GRADING: THE APPROXIMATE LIMITS OF CLEARING AND GRADING ARE AS GENERALLY SHOWN.
- 9. TRAILS: THERE IS AN EXISTING EIGHT FOOT TRAIL THAT WAS BUILT AS PART OF THE FAIRFAX COUNTY PARKWAY CONSTRUCTION PROJECT NUMBER R-000-029-249-C-530 (DEED BOOK 11841 PAGE 1324). IN ADDITION, SIDEWALKS EXIST ON NEW DOMINION PARKWAY AND TOWN CENTER PARKWAY.
- 10. GRAVES: TO THE BEST OF THE APPLICANT'S KNOWLEDGE AND BELIEF, THERE IS NO EVIDENCE OF ANY GRAVE, OBJECT, OR STRUCTURE MARKING A PLACE OF BURIAL ON THE RESTON HOSPITAL CAMPUS.
- 11. SCENIC ASSETS/ NATURAL FEATURES: THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PRESERVATION ON THIS PROPERTY.
- 12. HAZARDOUS MATERIALS: TO THE BEST OF THE APPLICANT'S KNOWLEDGE AND BELIEF, THERE ARE NO HAZARDOUS OR TOXIC MATERIALS ((AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS (COFR) PARTS 116.4, 302.4, AND 355, COMMONWEALTH OF VIRGINIA DEPARTMENT OF WASTE MANAGEMENT REGULATIONS VR 672-10-1 VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS, AND/OR PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, COFR PART 280)) OR STORAGE TANKS OR CONTAINERS ON THE SUBJECT PROPERTY. SUCH SUBSTANCES WILL NOT BE GENERATED, UTILIZED, STORED, TREATED, AND/OR DISPOSED OF ON-SITE. IN THE EVENT THAT SUCH SUBSTANCES ARE
- 13. SIGNAGE: ENTRY AND DIRECTORY SIGNAGE CURRENTLY EXIST ON SITE. ADDITIONAL SIGNAGE, IF ANY, WILL BE DETERMINED AT THE TIME OF FINAL SITE PLAN. ALL SIGNS SHALL COMPLY WITH THE ZONING ORDINANCE.
- 14. SCHEDULE: THE DEVELOPMENT SCHEDULE SHALL BE DETERMINED BY THE APPLICANT BASED ON THE NEEDS OF THE HOSPITAL.
- 15. FLOODPLAIN: THERE IS NO FLOODPLAIN, ENVIRONMENTAL QUALITY CORRIDOR (EQC), RESOURCE PROTECTION AREA (RPA), OR RESOURCE MANAGEMENT AREA (RMA) ON THE RESTON HOSPITAL CAMPUS.
- 16. SOILS: THE FAIRFAX COUNTY SOILS MAP IS SHOWN ON THE COVER SHEET.
- 17. ARCHITECTURAL STATEMENT: THE ARCHITECTURAL ELEMENT FOR THE PROPOSED ADDITIONS AND GARAGES WILL BE CONSISTENT WITH THE EXISTING HOSPITAL AND THE EXISTING GARAGES.

BUILDING GROSS FLOOR AREA (GFA) TABULATIONS

EXISTING BUILDING AREA		PROPOSED BUILDING AREA	PROPOSED BUILDING AREA			
EXISTING HOSPITAL	313,657 SF*	TOTAL HOSPITAL AREA	453,417 SF**			
EXISTING MEDICAL OFFICE BUILDING	66,800 SF	TOTAL MEDICAL OFFICE BUILDING AREA	511,350 SF			
EXISTING MEDICAL OFFICE BUILDING	124,763 SF					
EXISTING MEDICAL OFFICE BUILDING	125,000 SF					
TOTAL BUILDING AREA	630,220 SF	TOTAL BUILDING AREA	964,767 SF			
TOTAL SITE AREA FOR RESTON HOSPITAL CAMPUS	31.65 AC (1,378,238 SF)	TOTAL SITE AREA FOR RESTON HOSPITAL CAMPUS	31.65 AC (1,378,238 SF)			
FLOOR AREA RATIO	0.46 FAR	MAXIMUM FLOOR AREA RATIO TO BE CONSTRUCTED ON THE PROPERTY	0.70 FAR***			

- * EXCLUDES 16,475 SF OF EXISTING CELLAR SPACE ** EXCLUDES 16.475 SF OF EXISTING CELLAR SPACE
- AND 35,555 SF OF PROPOSED CELLAR SPACE *** THE IMPROVEMENTS SHOWN ON SHEET 3 ADD UP TO A TOTAL OF 983.915 SQUARE FEET OF GFA ON THE PROPERTY, WHICH EQUATES TO A 0.71 FAR. WITH THIS PLAN, THE APPLICANT COMMITS TO CONSTRUCT NO MORE THAN A TOTAL OF 964,767 SQUARE FEET OF GFA ON THE PROPERTY, WHICH EQUATES TO A 0.70 FAR.

REQUIRED PARKING

REQUIRED - 2.9 SPACES PER HOSPITAL BED - (339 BEDS):

984 SPACES

MEDICAL OFFICE BUILDING:

1,346 SPACES 2,330 SPACES REQUIRED - 2.6 SPACES PER 1000 SF MEDICAL OFFICE BUILDING - 517,348 SF TOTAL REQUIRED FOR RESTON HOSPITAL CAMPUS:

PROVIDED PARKING SURFACE PARKING PROVIDED:

GARAGE PARKING PROVIDED: TOTAL PROVIDED PARKING:

1,121 SPACES 1.493 **SPACES**

LOADING SPACES

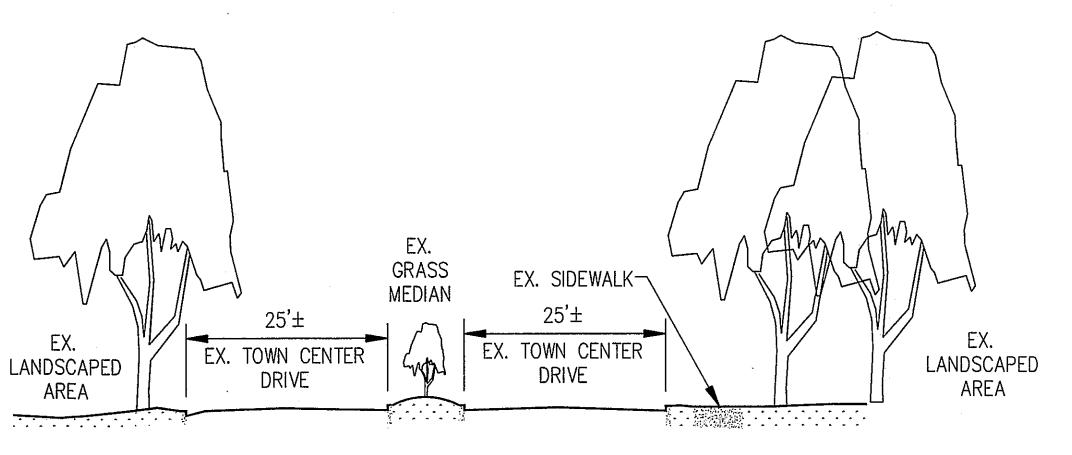
REQUIRED - 1 SPACE FIRST 10,000 SQ FT PLUS 1 SPACE EACH ADDITIONAL 100,000 SQ FT PROVIDE - 13 LOADING SPACES

OPEN SPACES CALCULATIONS

TOTAL SITE AREA TOTAL OPEN SPACE

% OF OPEN SPACE PROVIDED

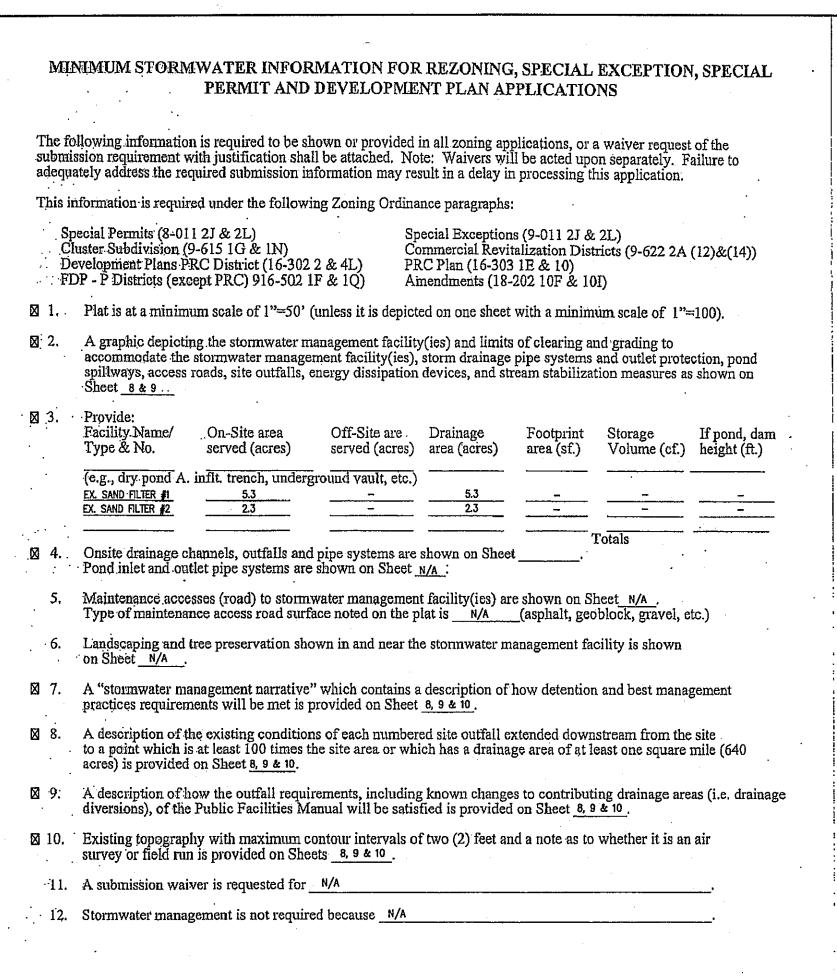
31.65 AC 9.10 AC 28%

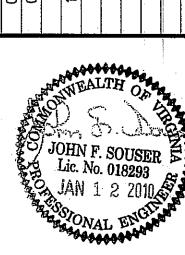


EXISTING TOWN CENTER DRIVE CROSS SECTION

Revised 2-21-2006

Application No. PRC 2009-HM-014 S. Lin						
APPROVED DEVELOPMENT PLAN						
(DP) (GDP) (CDP) (FDP) (RC)						
SEE PROFFERS DATED 1/12/10 PRC O.C. 1/25/10						
Date of BOS) (PC) approval 3/23/10						
Sheet 2 of 14						

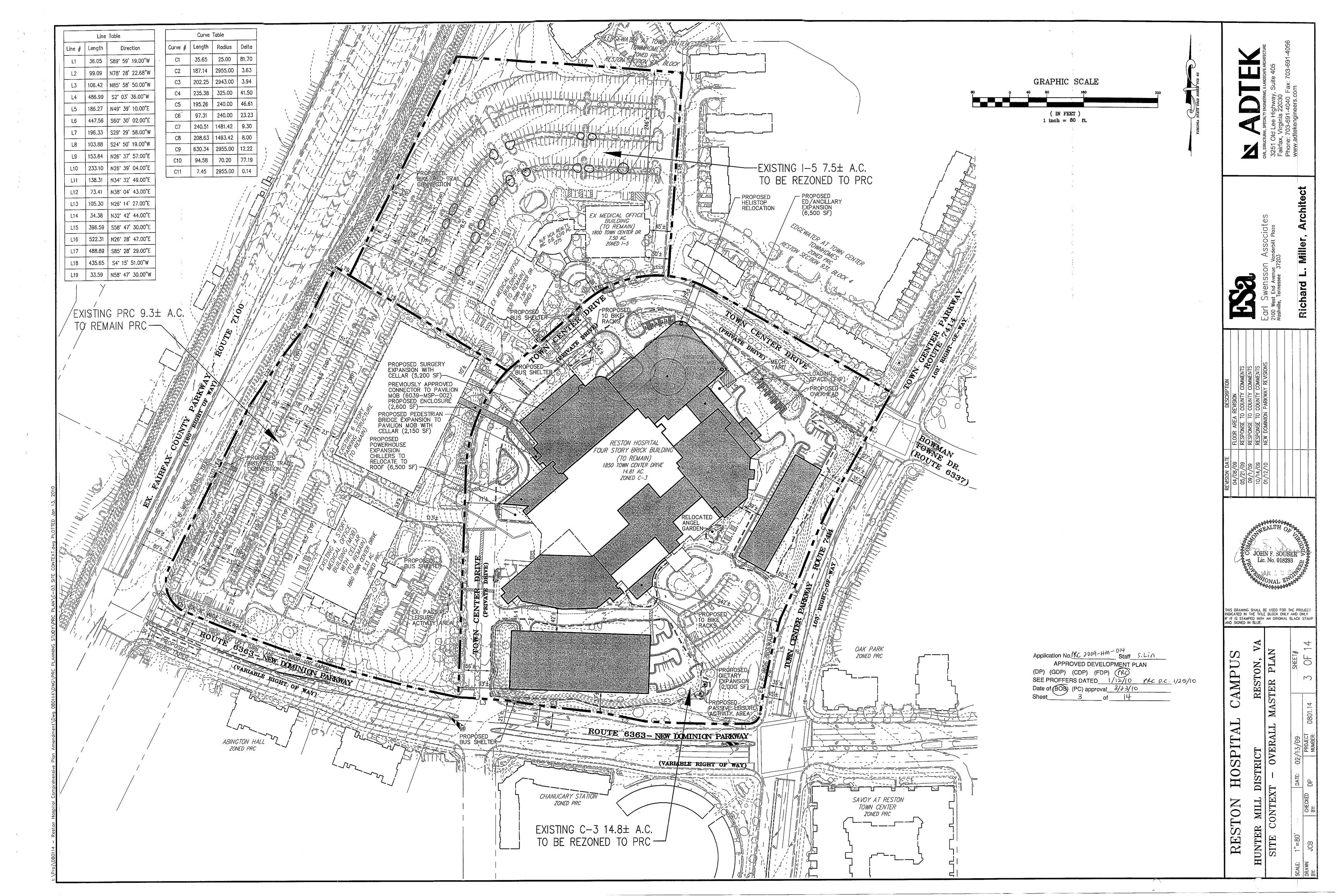


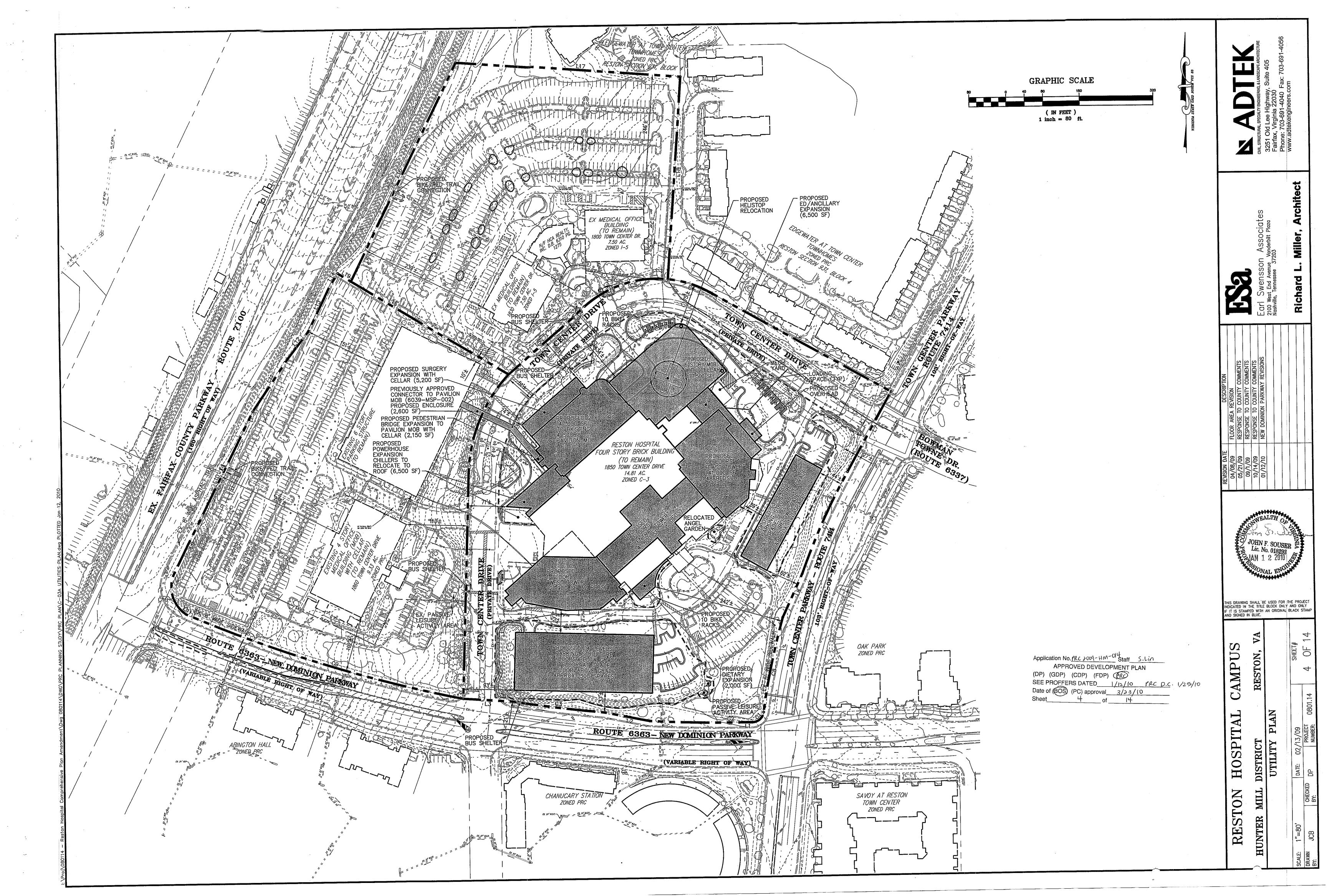


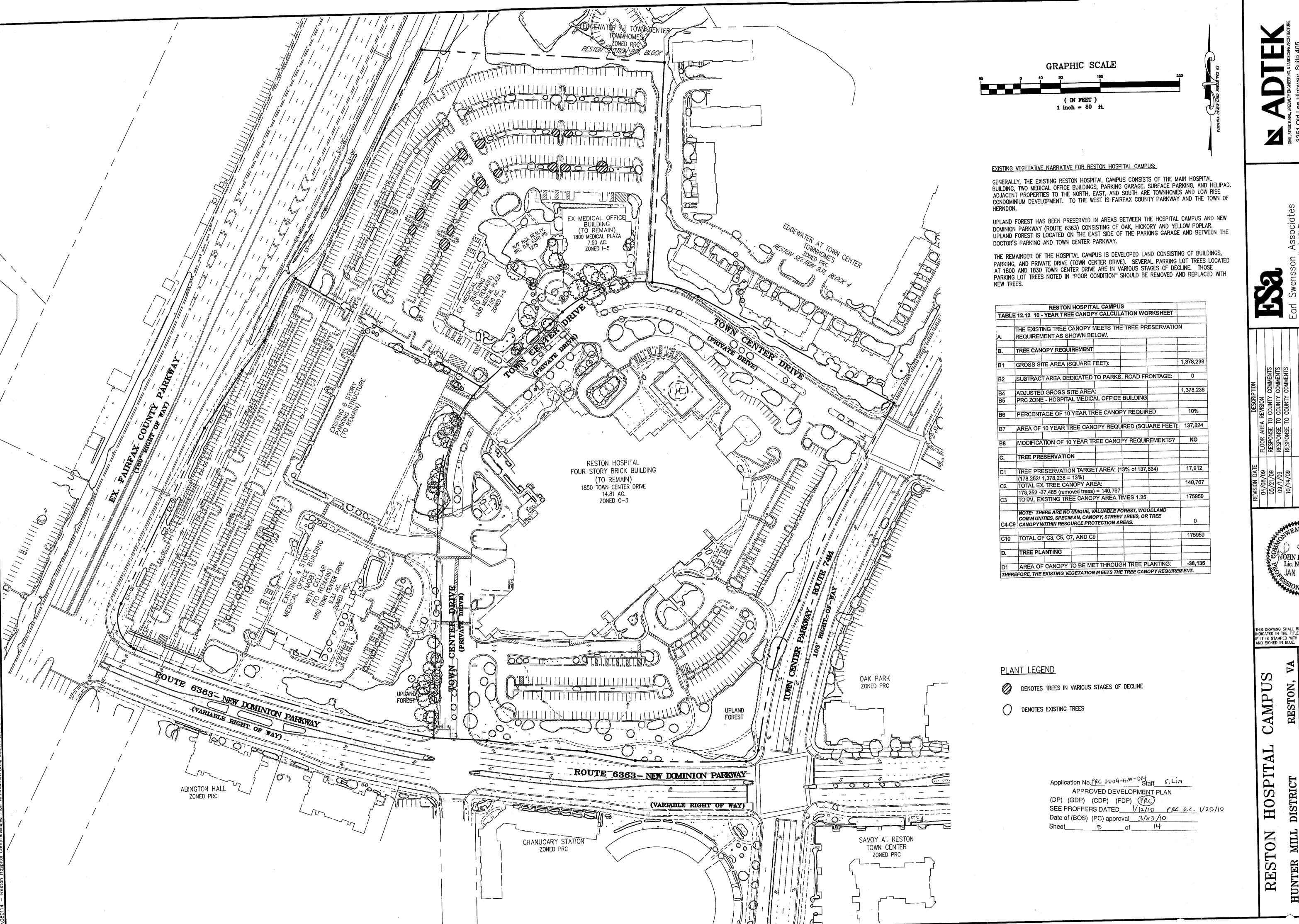
THIS DRAWING SHALL BE USED FOR THE PROJECT INDICATED IN THE TITLE BLOCK ONLY AND ONLY IF IT IS STAMPED WITH AN ORIGINAL BLACK STAMP AND SIGNED IN BLUE.

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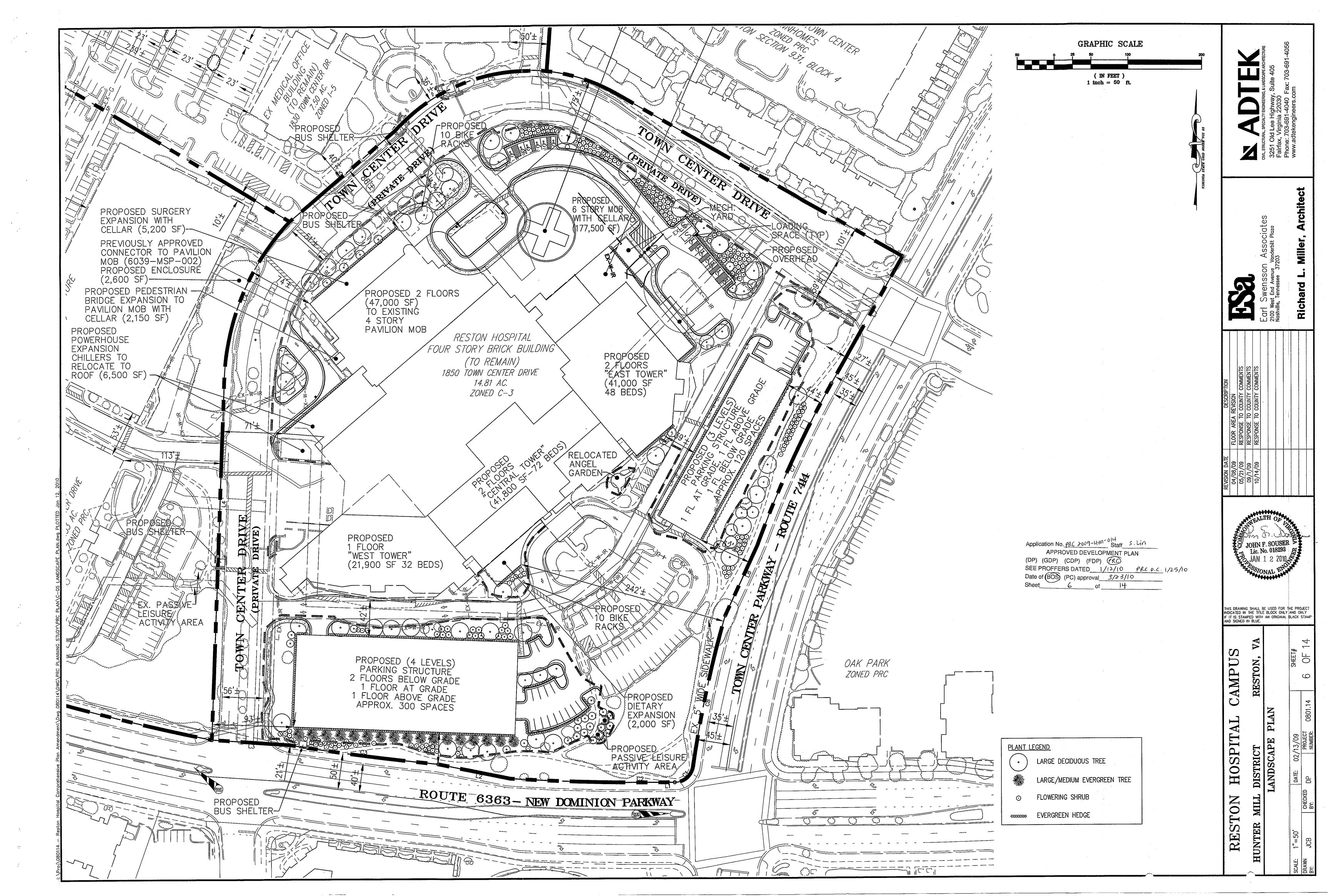


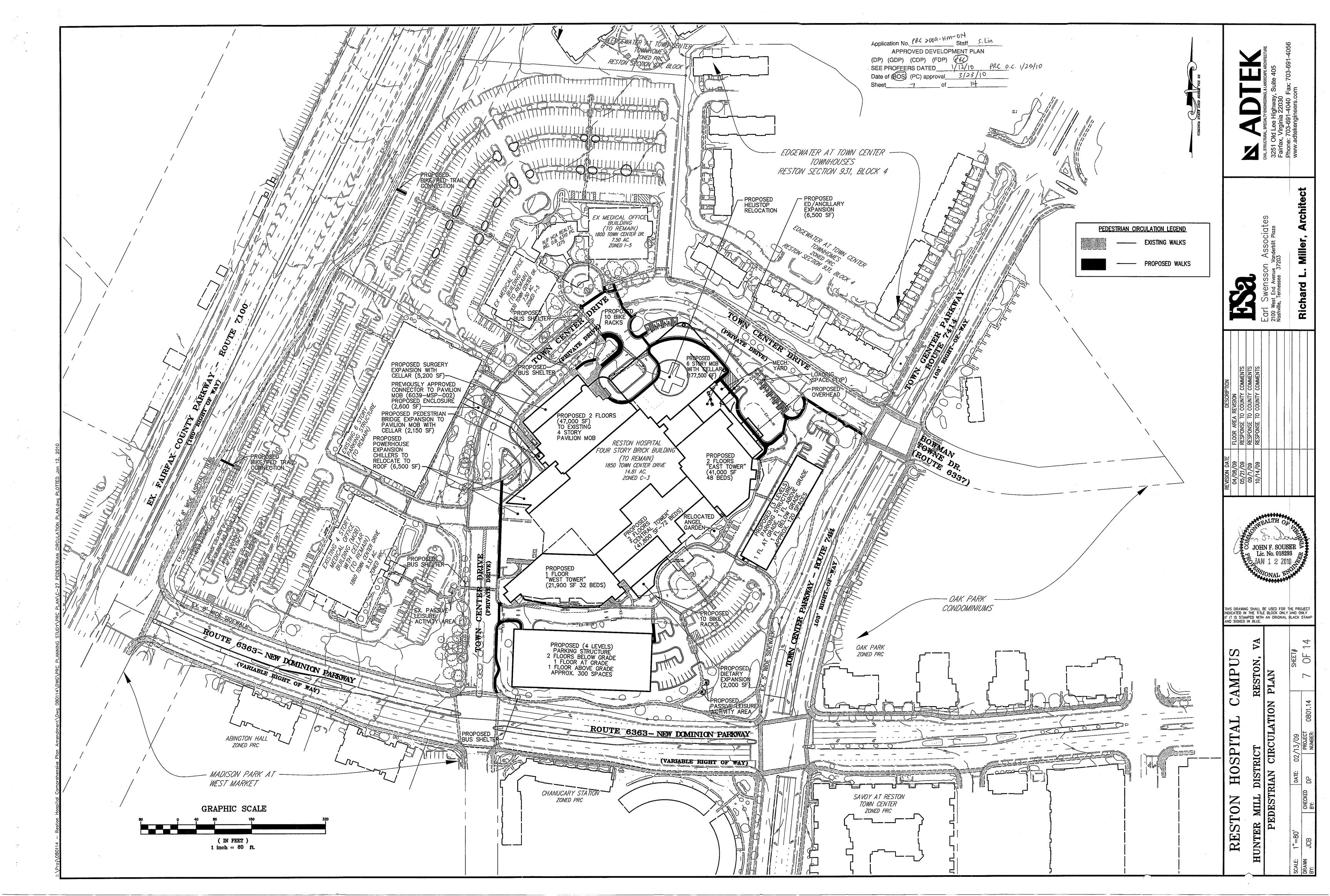


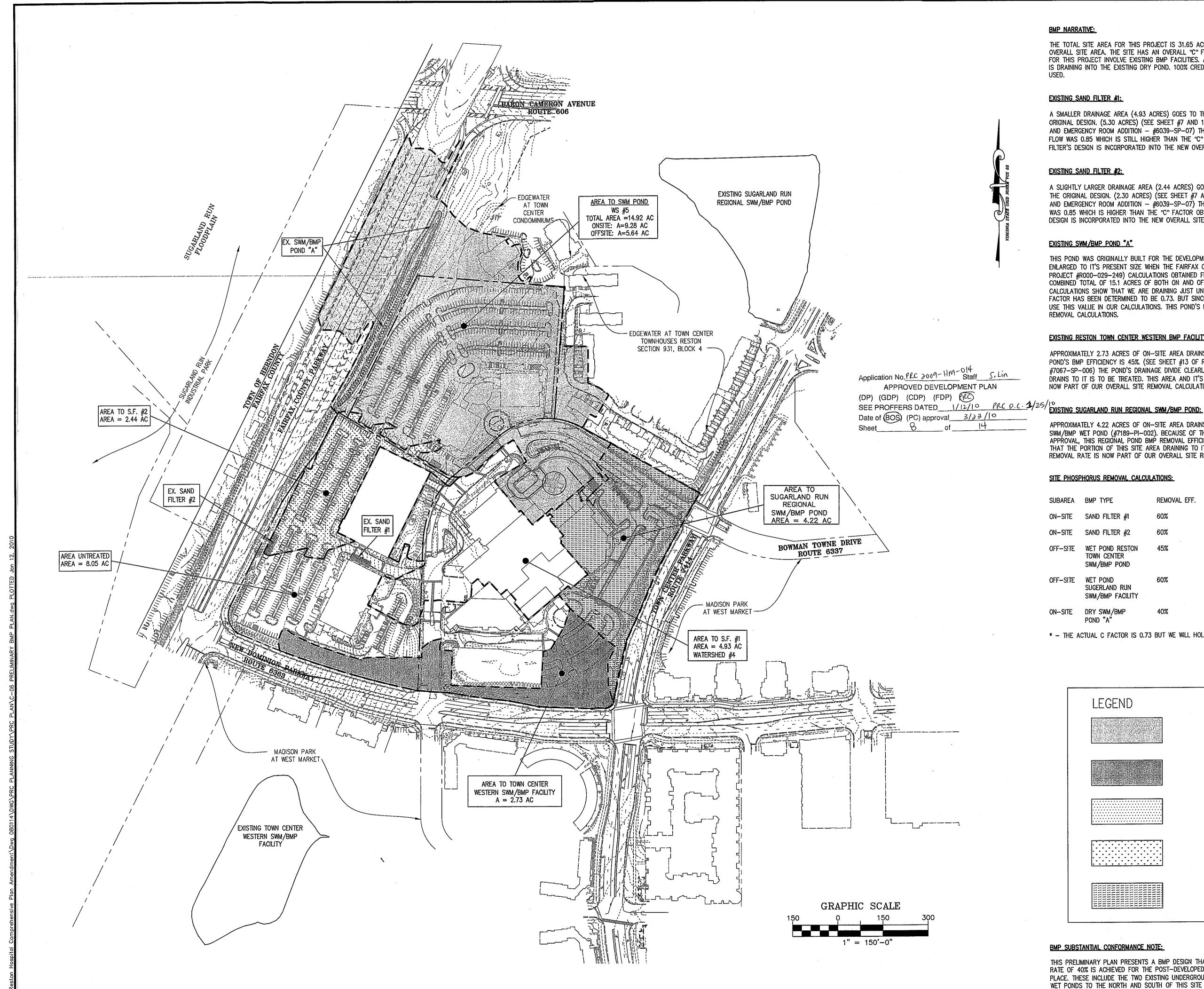


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BMP_NARRATIVE:

THE TOTAL SITE AREA FOR THIS PROJECT IS 31.65 ACRES. THE PHOSPHORUS REMOVAL RATES ARE BASED ON THE OVERALL SITE AREA. THE SITE HAS AN OVERALL "C" FACTOR OF 0.75. THERE ARE FIVE PRIMARY TREATMENT AREAS FOR THIS PROJECT INVOLVE EXISTING BMP FACILITIES. AN OFFSITE AREA 5.65 ACRES FROM THE COUNTY PARKWAY IS DRAINING INTO THE EXISTING DRY POND. 100% CREDIT TOWARDS THIS PROPERTY FROM THE OFFSITE IS BEING

EXISTING SAND FILTER #1:

A SMALLER DRAINAGE AREA (4.93 ACRES) GOES TO THIS FILTER AFTER THIS DEVELOPMENT THEN AS PER THE ORIGINAL DESIGN. (5.30 ACRES) (SEE SHEET #7 AND 17 OF THE RESTON HOSPITAL MEDICAL OFFICE BUILDING AND EMERGENCY ROOM ADDITION - #6039-SP-07) THE ORIGINAL DESIGN "C" FACTOR FOR POST DEVELOPMENT FLOW WAS 0.85 WHICH IS STILL HIGHER THAN THE "C" FACTOR OBTAINED WITH THIS DEVELOPMENT (0.79). THIS FILTER'S DESIGN IS INCORPORATED INTO THE NEW OVERALL SITE REMOVAL CALCULATIONS.

EXISTING SAND FILTER #2:

A SLIGHTLY LARGER DRAINAGE AREA (2.44 ACRES) GOES TO THIS FILTER AFTER THIS DEVELOPMENT THEN AS PER THE ORIGINAL DESIGN. (2.30 ACRES) (SEE SHEET #7 AND 17 OF THE RESTON HOSPITAL MEDICAL OFFICE BUILDING AND EMERGENCY ROOM ADDITION - #6039-SP-07) THE ORIGINAL "C" FACTOR FOR POST DEVELOPMENT FLOW WAS 0.85 WHICH IS HIGHER THAN THE "C" FACTOR OBTAINED WITH THIS DEVELOPMENT (0.77). THIS FILTER'S DESIGN IS INCORPORATED INTO THE NEW OVERALL SITE REMOVAL CALCULATIONS.

EXISTING SWM/BMP POND "A"

THIS POND WAS ORIGINALLY BUILT FOR THE DEVELOPMENT OF THE MEDICAL PLAZA SITE AREA BUT WAS THEN ENLARGED TO IT'S PRESENT SIZE WHEN THE FAIRFAX COUNTY PARKWAY WAS BUILT. (SEE SHEET 2K-1 STATE PROJECT #R000-029-249) CALCULATIONS OBTAINED FROM VDOT SHOW THAT THIS POND ACCOMMODATED A COMBINED TOTAL OF 15.1 ACRES OF BOTH ON AND OFF-SITE LAND WITH AN OVERALL "C" VALUE OF 0.69. OUR CALCULATIONS SHOW THAT WE ARE DRAINING JUST UNDER THIS AMOUNT OF 14.92 ACRES. OUR OVERALL "C" FACTOR HAS BEEN DETERMINED TO BE 0.73. BUT SINCE THE PREVIOUS POND PLAN ONLY USED 0.69, WE WILL USE THIS VALUE IN OUR CALCULATIONS. THIS POND'S DESIGN IS INCORPORATED INTO THE NEW OVERALL SITE REMOVAL CALCULATIONS.

EXISTING RESTON TOWN CENTER WESTERN BMP FACILITY:

APPROXIMATELY 2.73 ACRES OF ON-SITE AREA DRAINS TOWARDS THIS EXISTING SWM/BMP WET POND. THIS POND'S BMP EFFICIENCY IS 45%. (SEE SHEET #13 OF RESTON TOWN CENTER WESTERN SWM FACILITY #7067-SP-006) THE POND'S DRAINAGE DIVIDE CLEARLY SHOWED THAT THE PORTION OF THIS SITE AREA THAT DRAINS TO IT IS TO BE TREATED. THIS AREA AND IT'S DEVELOPED "C" FACTOR WITH A 45% REMOVAL RATE IS NOW PART OF OUR OVERALL SITE REMOVAL CALCULATIONS.

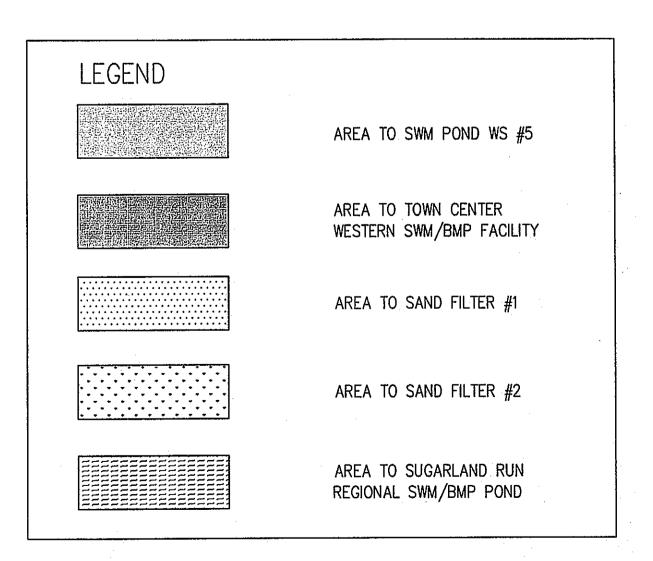
APPROXIMATELY 4.22 ACRES OF ON-SITE AREA DRAINS TOWARDS THIS EXISTING SUGARLAND RUN REGIONAL SWM/BMP WET POND (#7189-PI-002). BECAUSE OF THE REQUIREMENT OF THE PFM AT THE TIME OF PLAN APPROVAL, THIS REGIONAL POND BMP REMOVAL EFFICIENCY IS 60%. THE POND DRAINAGE DIVIDE CLEARLY SHOWED THAT THE PORTION OF THIS SITE AREA DRAINING TO IT IS TREATED. THIS AREA AND "C" FACTOR WITH A 60% REMOVAL RATE IS NOW PART OF OUR OVERALL SITE REMOVAL CALCULATIONS.

SITE PHOSPHORUS REMOVAL CALCULATIONS:

SUBAREA	BMP TYPE	REMOVAL EFF.	AREA	"C"	PRODUCT
ON-SITE	SAND FILTER #1	60%	4.93/31.65 X	0.79/0.75	= 9.84
ON-SITE	SAND FILTER #2	60%	2.44/31.65	0.77/0.75	= 4.74
OFF-SITE	WET POND RESTON TOWN CENTER SWM/BMP POND	45%	2.73/31.65	(0.49/0.75	= 2.54
OFF-SITE	WET POND SUGERLAND RUN SWM/BMP FACILITY	60%	4.22/31.65	(0.76/0.75	= 7.89
ON-SITE	DRY SWM/BMP	40%	14.92/31.65	X 0.69*/0.7	5 = 17.44

* - THE ACTUAL C FACTOR IS 0.73 BUT WE WILL HOLD WHAT THE ORIGINAL PLAN CALLED FOR.

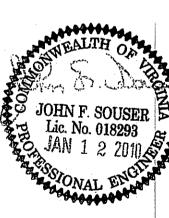
TOTAL = 42.45%



BMP SUBSTANTIAL CONFORMANCE NOTE:

THIS PRELIMINARY PLAN PRESENTS A BMP DESIGN THAT CONFIRMS THAT THE OVERALL BMP PHOSPHORUS REMOVAL RATE OF 40% IS ACHIEVED FOR THE POST-DEVELOPED SITE BY USING THE FACILITIES THAT ARE ALREADY IN PLACE. THESE INCLUDE THE TWO EXISTING UNDERGROUND SAND FILTER'S, THE TWO EXISTING OFF-SITE SWM/BMP WET PONDS TO THE NORTH AND SOUTH OF THIS SITE AND THE ON-SITE DRY POND.

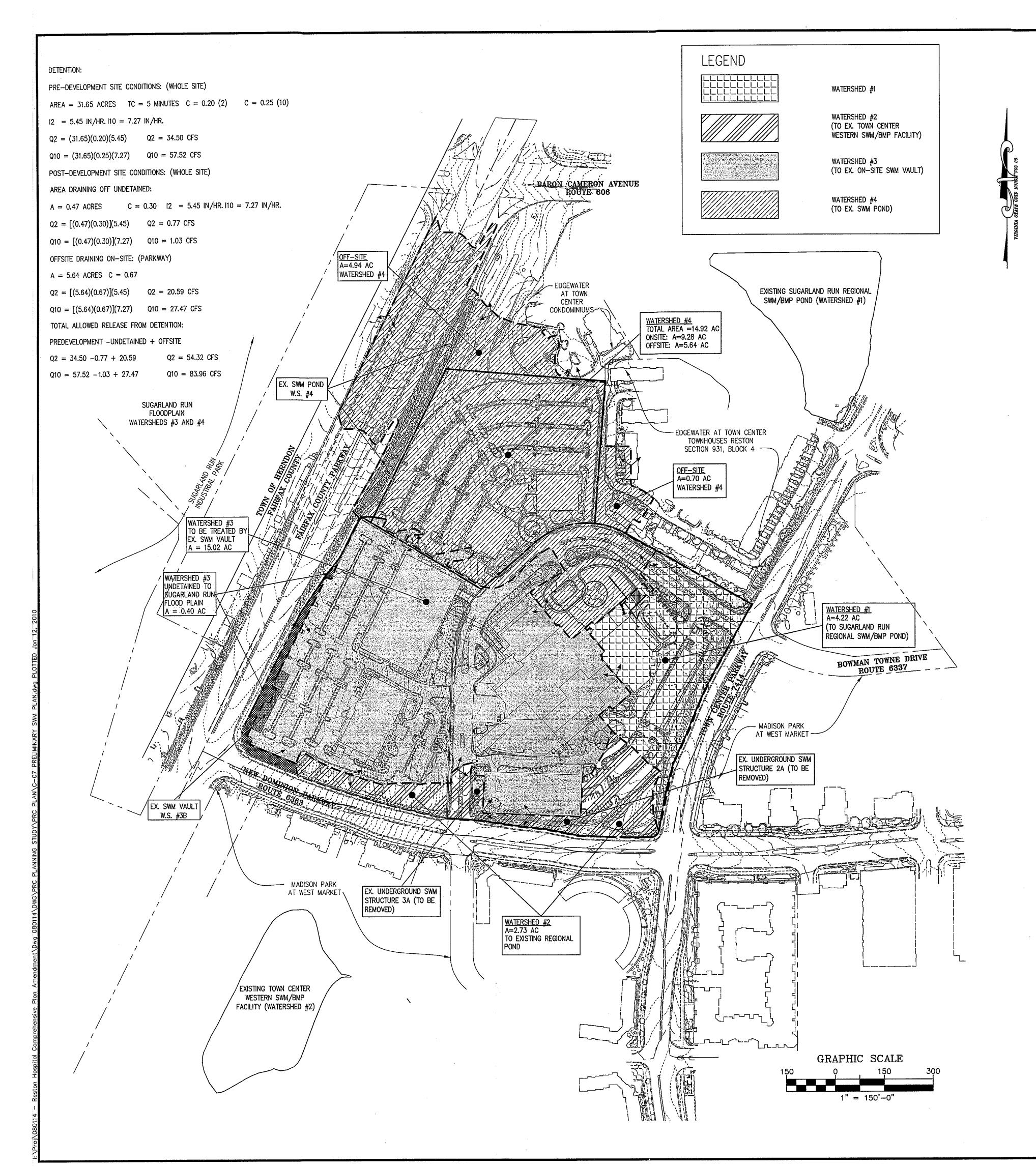
IT IS UNDERSTOOD THAT A WAIVER TO USE THE TWO EXISTING OFF-SITE SWM/BMP FACILITIES IS REQUIRED AND WILL BE SUBMITTED AT THE TIME OF THE FIRST SUBMISSION OF THE SITE PLAN. NO OTHER BMP FACILITIES ARE



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RESTON, IAGEMENT N AMPU HOSPITAL

RESTON



SWM_NARRATIVE:

THE TOTAL SITE AREA FOR THIS PROJECT IS 31.65 ACRES. THERE ARE FOUR PRIMARY WATERSHEDS. ONE OF THE WATERSHEDS IS USING AN EXISTING ON-SITE DETENTION SYSTEM. THE OTHER THREE WATERSHEDS ARE DRAINING TO OFF-SITE PONDS. THE SWM CALCULATIONS ANALYZE THE ENTIRE SITE AREA. OF THE ENTIRE AREA UNDER REVIEW, ONLY 0.40 ACRES (1.26% OF SITE) OF GRASSED AREA IS

A SEPARATE ANALYSIS FOR EACH WATERSHED IS AS FOLLOWS:

WATERSHED #1:

APPROXIMATELY 4.22 ACRES OF THIS SITE DRAINS NORTH TO THE SUGARLAND RUN REGIONAL SWM POND. THE POST-DEVELOPMENT "C" FACTOR FOR THIS SITE IS 0.74. THE TOTAL POST DEVELOPMENT IMPERVIOUSNESS AREA COMES OUT TO 2.81 ACRES.

THIS SITE AREA WAS SHOWN ON THE TOWN CENTER PARKWAY PLAN (#5734-PI-01) DRAINING TO THIS EXISTING REGIONAL POND LOCATED AT THE SOUTHERN SIDE OF THE INTERSECTION OF BARON CAMERON ROAD (ROUTE 606) AND TOWN CENTER PARKWAY (ROUTE 7414). THE PLANS FOR THIS POND (RESTON -SUGARLAND RUN REGIONAL SWM SYSTEM #7189-PI-02 - SHEET 10 OF 12) SHOW THAT IT WOULD TAKE CARE OF APPROXIMATELY 4.60 ACRES OF THIS SITE AT AN IMPERVIOUS FACTOR OF 0.75 FOR COMMERCIAL. THIS SITE'S DRAINAGE AREA IS ONLY 4.22 ACRES AND THE POST DEVELOPMENT "C" FACTOR IS 0.74 WHICH IS LOWER THAN 0.75. THEREFORE, DETENTION REQUIREMENTS HAVE BEEN SATISFIED FOR THIS WATERSHED WITH THE EXISTING SWM SYSTEM. NO OTHER ADDITIONAL DETENTION IS REQUIRED.

WATERSHED_#2:

APPROXIMATELY 2.73 ACRES OF THIS SITE DRAINS SOUTH TO THE RESTON TOWN CENTER WESTERN SWM FACILITY. (PLAN #7067-SP-06). THE TOTAL POST DEVELOPMENT IMPERVIOUSNESS AREA COMES OUT TO 0.87 ACRES.

ALL OF THE AREA IS TO BE TREATED BY THE EXISTING REGIONAL SWM FACILITY. PER THE RESTON HOSPITAL EXTENSION PLAN, THE "C" FACTOR FOR THE TWO YEAR STORM FOR THIS WATERSHED IS 0.20. THE TEN YEAR IS 0.25. THE POST DEVELOPMENT "C" FACTOR FOR THIS DRAINAGE AREA IS 0.49. THE SWM PLAN CALLS FOR A PREDEVELOPMENT FROM THIS SITE OF A WOODS AND GRASS COMBINATION (C = 0.30) AND THEN A POST DEVELOPED CN VALUE OF 94 WHICH IS ABOUT A "C" VALUE OF 0.87. BECAUSE THE POND WAS SIZED TO TREAT 7.31 ACRES OF SITE AREA AT A C VALUE OF 0.87 AND WE ARE NOW ONLY DRAINING 2.05 ACRES OF A C VALUE OF 0.49 THEN NO OTHER ADDITIONAL DETENTION IS REQUIRED. THERE WAS AN EXISTING UNDERGROUND FACILITY TO TREAT SOME OF THIS INCREASE IN RUNOFF BUT IT WAS DETERMINED THAT IT WAS NOT NEEDED AND IT IS NOW BEING REMOVED.

WATERSHED #3:

A TOTAL OF 15.02 ACRES OF THIS SITE DRAINS WEST THROUGH EXISTING STORM SEWERS WHICH INCLUDES THE RESTON HOSPITAL EMERGENCY ROOM ADDITION & MEDICAL OFFICE BUILDING SITE (PLAN #6039-SP-07) UNTIL REACHING AN ON-SITE EXISTING UNDERGROUND SWM FACILITY VAULT AT THE SOUTHWEST CORNER OF THE PARKING LOT. THE TOTAL POST DEVELOPMENT IMPERVIOUSNESS AREA COMES OUT TO 10.99 ACRES.

12.38 OF THE 15.02 ACRES HAS ALREADY BEEN DETAINED BY THE EXISTING UNDERGROUND VAULT FOR A POST DEVELOPED "C" FACTOR OF 0.85. (SEE SHEET #17 AND 22 OF RESTON EMERGENCY ROOM ADDITION #6039-SP-07) THE REMAINING 2.57 ACRES THAT IS BEING DEVELOPED IS BEING MADE UP WITH THE OVERALL SITE SWM ANALYSIS. THERE WAS AN UNDERGROUND SWM FACILITY TO TREAT SOME OF THE INCREASE IN RUN-OFF BUT NOW THAT WE ARE USING AN OVERALL DRAINAGE ANALYSIS IT HAS BEEN DETERMINED THAT THIS IS NO

0.40 ACRES OF THIS SITE'S WATERSHED IS DRAINING OFF UNDETAINED AND IS THE SAME AMOUNT AS BEFORE. THEREFORE, NO ADDITIONAL DETENTION IS REQUIRED.

WATERSHED #4:

APPROXIMATELY 14.92 ACRES OF OVERALL SITE (5.64 ACRES OF OFF-SITE & 9.28 ACRES OF ON-SITE) DRAINS TO THE VDOT - FAIRFAX COUNTY PARKWAY - POND A - SWM FACILITY. THIS FACILITY HANDLES SWM FOR BOTH THIS WATERSHED OF THIS SITE AREA AS WELL AS PART OF THE PARKWAY. THE TOTAL POST DEVELOPMENT IMPERVIOUSNESS AREA COMES OUT TO 10.60 ACRES.

THE SWM CALCULATIONS FOR THE POND BEFORE IT WAS ENLARGED AND DEDICATED BY THE VDOT PLAN SHOWED AN AREA = 8.30 ACRES ON-SITE, 1.52 ACRES OF THE RESTON HOSPITAL AND 1.67 ACRES OF OFF-SITE FROM THE EDGEWATER TOWNHOUSE COMMUNITY. (SEE THE RESTON HOSPITAL MEDICAL OFFICE BUILDING SHEET C7.12). FROM THE EDGEWATER AT TOWN CENTER DRAINAGE DIVIDE SHEETS, ONLY 0.70 ACRES OF OFF-SITE AREA IS NOW DRAINING TO THE POND RESULTING IN A REDUCTION OF 0.97 ACRES. THE AVERAGE "C" FACTOR OF THE EDGEWATER SITE IS 0.75. THIS GIVES A REDUCTION CA VALUE OF (0.97)(0.75)(7.27) = 5.29 CFS.

THERE ARE NO PLANNED IMPROVEMENTS ON THE MEDICAL OFFICE SITE BUT THERE WILL BE AN INCREASE IN IMPERVIOUSNESS DUE TO NEW DEVELOPMENT ON THE HOSPITAL SITE OF APPROXIMATELY 20,000 SF OR 0.46 ACRES. THIS GIVES A VALUE OF (0.46)(0.90)(7.27) = 3.0 CFS. THIS VALUE IS LESS THAN THE ABOVE REDUCED VALUE OF 5.29 RESULTING IN NO NEED FOR ANY FURTHER DETENTION.

THIS POND WAS ENLARGED BY VDOT WHEN THE PARKWAY WAS PUT IN PLACE. VDOT CALCULATIONS SHOW THAT VDOT SIZED THE POND TO HANDLE A POST DEVELOPMENT FLOW OF 15.1 ACRES AT AN OVERALL "C" FACTOR OF 0.69 OF BOTH ON-SITE AND PARKWAY LAND FROM A PREDEVELOPED AREA OF 10.5 ACRES AND A "C" FACTOR OF 0.40. THIS COMES OUT TO A POST DEVELOPED FLOW AMOUNT 75.75 CFS. OUR POST DEVELOPMENT AREA IS 14.92 ACRES AND THE OVERALL "C" FACTOR IS 0.73 RESULTING IN A FLOW AMOUNT OF 79.18 CFS. THIS RESULTS IN AN INCREASE IN A TEN YEAR STORM OF ONLY 79.18-75.75 = 3.43 CFS. IF YOU TAKE THE EDGEWATER REDUCION OF 5.29 CFS - 3.0 CFS - 3.43 CFS = 1.14 CFS WHICH IS THE OVERALL INCREASE IN FLOW. THIS INCREASE IS MADE UP FOR IN THE CALCULATIONS BELOW FOR THE OVERALL SITE.

POST DEVELOPMENT FLOWS FROM EACH WATERSHED:

WATERSHED #1: (GOING TO EXISTING SUGARLAND RUN REGIONAL POND)

Q2 = (4.22AC.)(0.74)(5.45) CFS Q2 = 17.02 CFS Q10 = (4.22AC.)(0.74)(7.27) CFS Q10 = 22.70 CFS

> *THESE RELEASE RATES ARE AT A CN VALUE OF 87. THESE ARE BEING DETAINED TO A CN VALUE OF 66. THIS COMES DOWN TO AN EQUIVALENT C VALUE OF 0.74 TO 0.57. BY 0.57/0.74 = 0.77 OR ABOUT 23% FLOW

Q2 = (17.02)(0.77) = 13.11 CFSQ10 = (22.70)(0.77) = 17.48 CFS

WATERSHED #2: (UNDETAINED RELEASE)

Q2 = (2.73AC.)(0.49)(5.45) = 7.29 CFSQ10 = (2.73AC.)(0.49)(7.27) = 9.73 CFS

WATERSHED #3: (RELEASE FROM EX. VAULT AND INCREASE IN IMPERVIOUS)

Q2 = 9.24 + (2.57AC.)(0.80-0.20)(5.45) = 9.24 + 8.40 = 17.65 CFSQ10 = 23.0 + (2.57AC.)(0.80-0.25)(7.27) = 23.0 + 10.28 = 33.28 CFS

WATERSHED #4: (RELEASE FROM EXISTING DRY POND)

Q10 = 18.40 CFSQ2 = 0.88 CFS(INCREASE IN RUNOFF DUE TO DEVELOPMENT) Q10 = 1.14 CFSQ2 = 0.86 CFS

Q10 = 19.54 CFS

PROJECT TOTAL: Q2 = 39.79 < 54.32 CFS Q10 = 80.03 < 89.96 CFS

TOTAL IMPERVIOUS AREA: 25.27 ACRES

SWM SUBSTANTIAL CONFORMANCE NOTE:

THIS PRELIMINARY PLAN PRESENTS A SWM DESIGN THAT CONFIRMS REDUCING THE TWO-YEAR AND TEN-YEAR RELEASE RATES TO BELOW THAT OF THE PRE-DEVELOPED RATES CAN BE ACHIEVED WITH THE EXISTING SWM FACILITIES THAT ARE ON-SITE AND OFF-SITE. THESE EXISTING FACILITIES ARE THE TWO EXISTING SWM WET PONDS TO THE NORTH AND SOUTH OF THIS SITE, THE ONSITE DRY POND AND THE UNDERGROUND CONCRETE VAULT.

ANY NEW UNDERGROUND FACILITIES MAY CONSIST OF PIPES, VAULTS, A MANUFACTURED SYSTEM, A GRAVEL INFILTRATION TRENCH, ANY COMBINATION THEREOF OR OTHER INOVATIVE METHODS AS DETERMINED DURING FINAL ENGINEERING AND WILL BE CONDSIDERED TO BE IN SUBSTANTIAL CONFORMANCE WITH THIS PLAN REGARDLESS OF THE FINAL NUMBER OR LOCATIONS OF ANY ADDITIONAL SWM FACILITIES WITHIN THE LIMITS OF CLEARING AND GRADING WILL NOT REQUIRE A ZONING CONFORMANCE INTERPRETATION OR A ZONING CONFORMANCE DETERMINATION OR A ZONING CONFORMANCE MODIFICATION REQUEST.

THIS DRAWING SHALL BE USED FOR THE PROJECT INDICATED IN THE TITLE BLOCK ONLY AND ONLY IF IT IS STAMPED WITH AN ORIGINAL BLACK STAM AND SIGNED IN BLUE.

Application No. PRC 2009-HM-014 S. Lin

(DP) (GDP) (CDP) (FDP) (PRC)

Date of (EOS) (PC) approval 3/23/10

APPROVED DEVELOPMENT PLAN

SEE PROFFERS DATED 1/12/10 PRC O.C. 1/25/

CAMPU

HOSPITAI

DISTRICT

RESTON

OUTFALL NARRATIVE

THE RESTON HOSPITAL CAMPUS IS LOCATED WITHIN THE SUGARLAND RUN WATERSHED. THERE ARE SIX SEPARATE DRAINAGE AREAS FOR THE HOSPITAL CAMPUS.

DRAINAGE AREA #1 CONSISTS OF 4.32 ACRES ALONG THE NORTH-EAST CORNER OF THE SITE. THE OUTFALL FROM THIS DRAINAGE AREA LEAVES THE HOSPITAL CAMPUS WITHIN AN EXISTING ADEQUATELY SIZED STORM SEWER SYSTEM. THE PATH OF FLOW CONTINUES TO THE NORTH THROUGH THE EDGEWATER AT TOWN CENTER DEVELOPMENT AND INTO THE EXISTING EDGEWATER AT TOWN CENTER WET POND. THE FLOW THEN CONTINUES ACROSS BARON CAMERON AVENUE AND INTO THE EXISTING POND FOR THE CRYSTAL COVE AT RESTON DEVELOPMENT. THIS IS THE POINT AT WHICH THE OUTFALL ASSOCIATED WITH DRAINAGE AREA #1 REACHES A WATERCOURSE WITH A CONTRIBUTING DRAINAGE AREA 100 TIMES THE CONTRIBUTING DRAINAGE AREA.

DRAINAGE AREAS #2 AND #5 CONSIST OF 1.57 ACRES AND 1.73 ACRES RESPECTIVELY ALONG THE SOUTH-EAST CORNER OF THE SITE AND THE SOUTHERN PROPERTY BORDER. THE OUTFALLS FROM THESE DRAINAGE AREAS LEAVE THE HOSPITAL CAMPUS WITHIN AN EXISTING ADEQUATELY SIZED STORM SEWER SYSTEM. THE PATH OF FLOW CONTINUES THROUGH THE MADISON PARK AND WEST MARKET DEVELOPMENT AND INTO ITS EXISTING WET POND. THE OUTFALL THEN CONTINUES WITHIN STORM SEWER ACROSS FAIRFAX COUNTY PARKWAY TO THE WEST AND INTO THE SUGARLAND RUN FLOOD PLAIN. THIS IS THE POINT AT WHICH THE OUTFALL ASSOCIATED WITH DRAINAGE AREAS #2 AND #5 REACH A FLOODPLAIN WITH A CONTRIBUTING DRAINAGE AREA OF 1 SQUARE MILE OR MORE.

DRAINAGE AREA #3 CONSISTS OF 14.09 ACRES WHICH IS LOCATED WITHIN THE SOUTH-CENTRAL AND SOUTH-WESTERN PORTION OF THE SITE. THE RUNOFF OUTFALLS FROM DRAINAGE AREA #3 AFTER BEING DETAINED WITHIN THE EXISTING ONSITE UNDERGROUND STORM WATER DETENTION FACILITY LOCATED IN THE WESTERN PORTION OF THE EXISTING PARKING LOT. ONCE LEAVING THE SITE, THE OUTFALL CROSSES FAIRFAX COUNTY PARKWAY TO THE WEST WITHIN AN EXISTING ADEQUATELY SIZED STORM SEWER PIPE WHERE IT THEN OUTFALLS INTO THE SUGARLAND RUN FLOOD PLAIN. THIS IS THE POINT AT WHICH THE OUTFALL ASSOCIATED WITH DRAINAGE AREA #3 REACHES A FLOODPLAIN WITH A CONTRIBUTING DRAINAGE AREA OF 1 SQUARE MILE OR MORË.

DRAINAGE AREA #4 CONSISTS OF 15.02 ACRES (4.18 ACRES OFFSITE) WHICH IS LOCATED IN THE NORTH-WESTERN PORTION OF THE SITE. THE RUNOFF OUTFALLS FROM DRAINAGE AREA #4 AFTER BEING DETAINED WITHIN THE EXISTING OFFSITE STORM WATER MANAGEMENT POND THAT RUNS ALONG THE WESTERN EDGE OF THE PARKING LOT AND THE EASTERN SIDE OF THE FAIRFAX COUNTY PARKWAY. THE OUTFALL CONTINUES FROM THIS POND WITHIN AN EXISTING STORM SEWER SYSTEM WHERE IT CROSSES FAIRFAX COUNTY PARKWAY THROUGH THE SUGARLAND RUN INDUSTRIAL PARK WITHIN THIS STORM SEWER AND ULTIMATELY INTO THE SUGARLAND RUN FLOOD PLAIN. THIS IS THE POINT AT WHICH THE OUTFALL ASSOCIATED WITH DRAINAGE AREA #4 REACHES A FLOODPLAIN WITH A CONTRIBUTING DRAINAGE AREA OF 1 SQUARE MILE OR MORE.

DRAINAGE AREA #6 CONSISTS OF 0.32 ACRES THAT RUNS ALONG THE SOUTH-WESTERN PORTION OF THE EXISTING PARKING LOT. THE OUTFALL FROM THIS AREA IS NOT CONCENTRATED ONSITE AND IS CONSIDERED SHEETFLOW. ULTIMATELY, THIS RUNOFF IS PICKED UP BY THE STORM SYSTEM WITHIN FAIRFAX COUNTY PARKWAY AND DISCHARGES INTO THE SUGARLAND RUN FLOOD PLAIN.

THE ADEQUATE OUTFALL REQUIREMENTS OF THE PUBLIC FACILITIES MANUAL WILL BE MET BY DETAILED ANALYSIS AS PART OF THE FUTURE SITE PLAN ASSOCIATED WITH THIS PROJECT, HOWEVER A SYNOPSIS OF THE PROPOSED INVESTIGATION IS DESCRIBED BELOW.

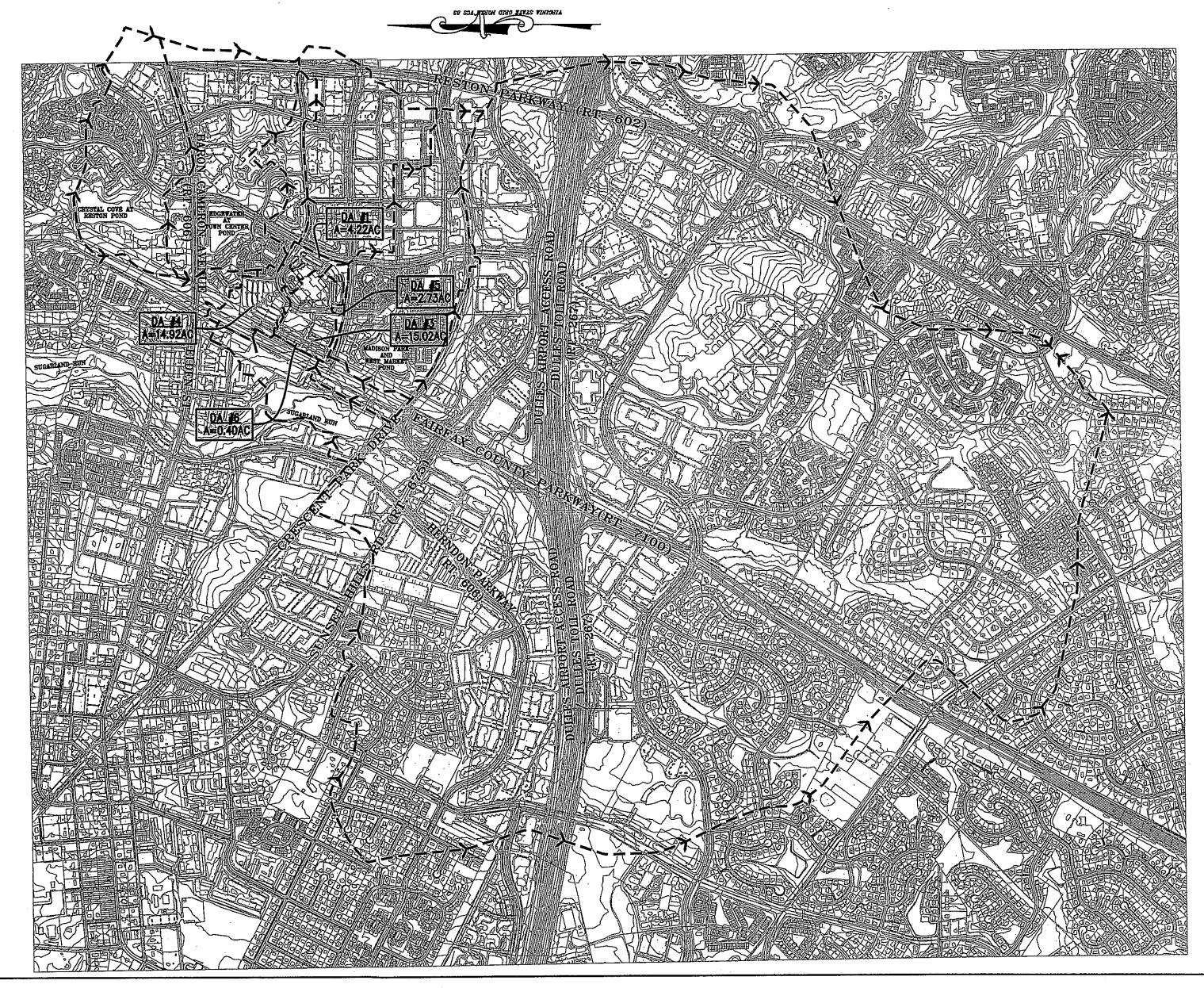
THE ADEQUACY OF OUTFALL FOR DRAINAGE AREA #1 IS ANALYZED TO A POINT JUST NORTH OF THE SITE WHERE A CONFLUENCE OF AT LEAST 90% OF THE SITES CONTRIBUTING AREA IS MET. THE REQUIRED EXTENT OF REVIEW ALL LIES WITHIN THIS EXISTING ADEQUATELY SIZED STORM SEWER SYSTEM AND IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FOR DRAINAGE AREA #1 IS ADEQUATE.

THE ADEQUACY OF OUTFALL FOR DRAINAGE AREAS #2 AND #5 IS DETERMINED BY ANALYZING THE PATH OF FLOW FROM THE SITE. A POINT OF CONFLUENCE IS MET AT THE EXISTING STORM WATER MANAGEMENT POND WHERE A CONTRIBUTING DRAINAGE AREA OF AT LEAST 90% OF THE SITES CONTRIBUTING AREA IS MET. THE REQUIRED EXTENT OF REVIEW LIES WITHIN EXISTING ADEQUATELY SIZED STORM SEWER SYSTEM AND IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FOR THE TWO AREAS IS ADEQUATE.

THE ADEQUACY OF OUTFALL FOR DRAINAGE AREA #3 IS DETERMINED BY ANALYZING THE PATH OF FLOW FROM THE SITE TO WHERE THIS OUTFALL ENTERS SUGARLAND RUN. THREE CROSS SECTIONS FROM THE PIPE OUTFALL INTO THE FLOOD PLAIN WILL BE PROVIDED 150 FEET DOWNSTREAM. THESE CROSS SECTIONS WITHIN THE WELL ESTABLISHED DRAINAGE CHANNEL WILL SHOW THAT THE CHANNEL IS ADEQUATE TO CONVEY THE 10 YEAR STORM EVENT AND CONTAINS NON-EROSIVE VELOCITIES FOR THE 2 YEAR STORM. IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FOR DRAINAGE AREA #3 IS ADEQUATE.

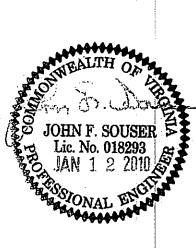
THE ADEQUACY OF OUTFALL FOR DRAINAGE AREA #4 IS DETERMINED BY ANALYZING THE PATH OF FLOW FROM THE SITE TO WHERE THIS OUTFALL ENTERS SUGARLAND RUN. THREE CROSS SECTIONS FROM THE PIPE OUTFALL INTO THE FLOOD PLAIN WILL BE PROVIDED 150 FEET DOWNSTREAM. THESE CROSS SECTIONS WITHIN THE WELL ESTABLISHED DRAINAGE CHANNEL WILL SHOW THAT THE CHANNEL IS ADEQUATE TO CONVEY THE 10 YEAR STORM EVENT AND CONTAINS NON-EROSIVE VELOCITIES FOR THE 2 YEAR STORM. IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FOR DRAINAGE AREA #4 IS ADEQUATE.

THE ADEQUACY OF OUTFALL FOR DRAINAGE AREA #6 IS MET AT THE PROPERTY LINE AS THIS ENTIRE AREA IS CONSIDERED SHEET FLOW. THE RUNOFF FROM THIS AREA IS NON-EROSIVE AND NOT CONCENTRATED ONSITE. DUE TO THE SHEET FLOW CONDITION IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FROM DRAINAGE AREA #6 IS ADEQUATE.



OVERALL DRAINAGE DIVIDE MAP SCALE: 1": 1000'

Application No. PRC 2009-HM-014 Staff S. Lin APPROVED DEVELOPMENT PLAN (DP) (GDP) (CDP) (FDP) (FRC) SEE PROFFERS DATED 1/12/10 PRC D.C. 1/25/10 Date of (BOS) (PC) approval 3/23/10 Sheet______10 of 14



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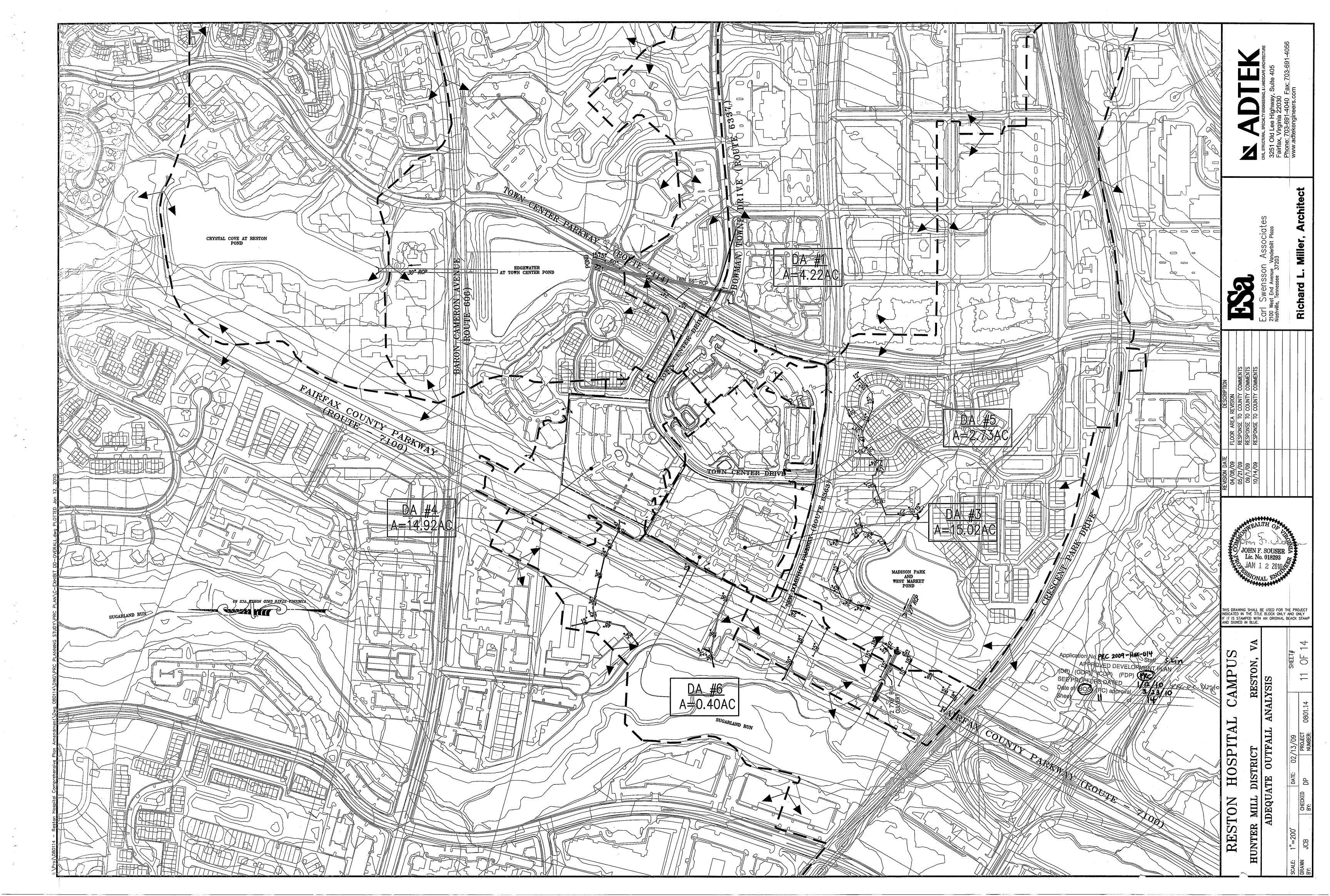
CAMPUS

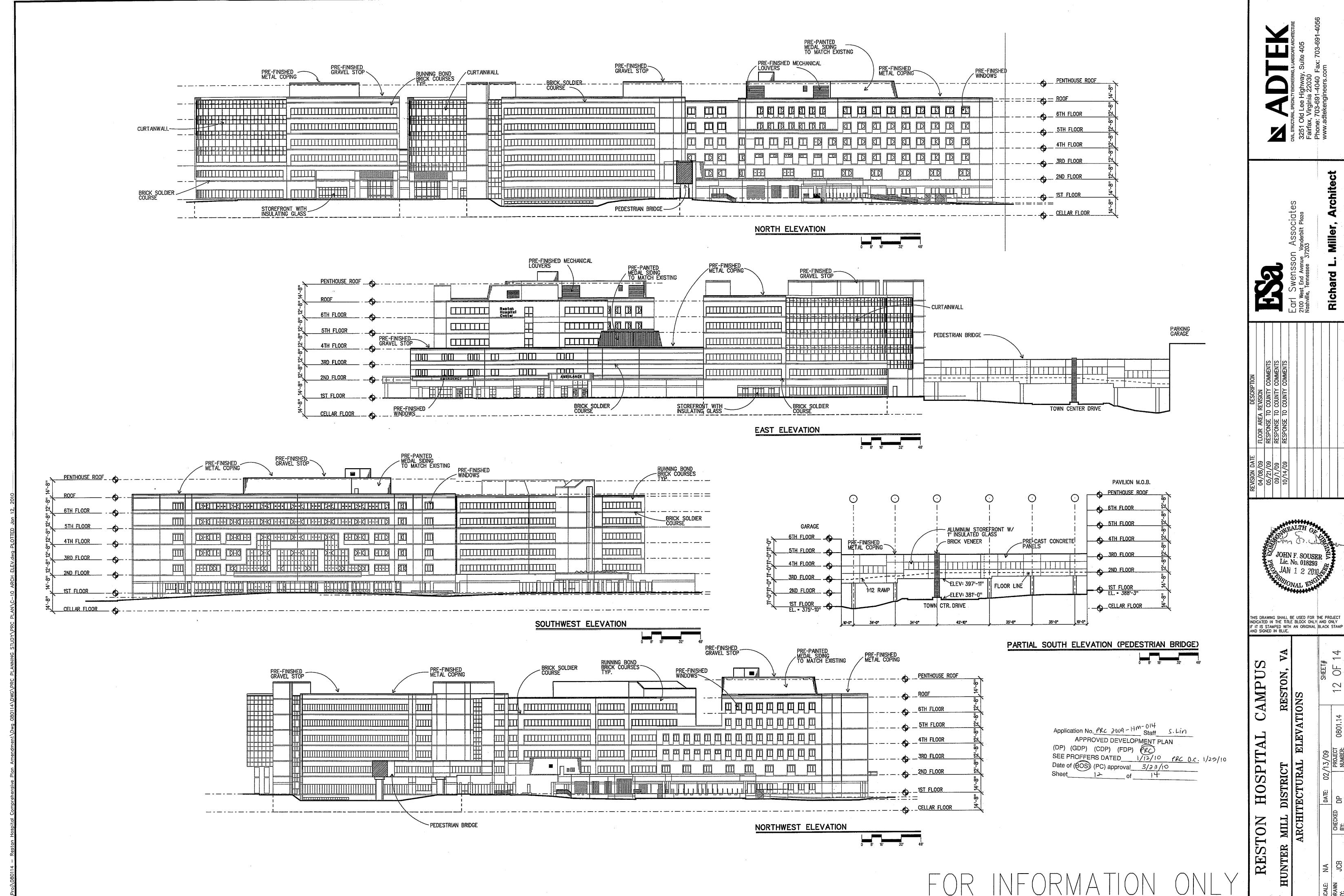
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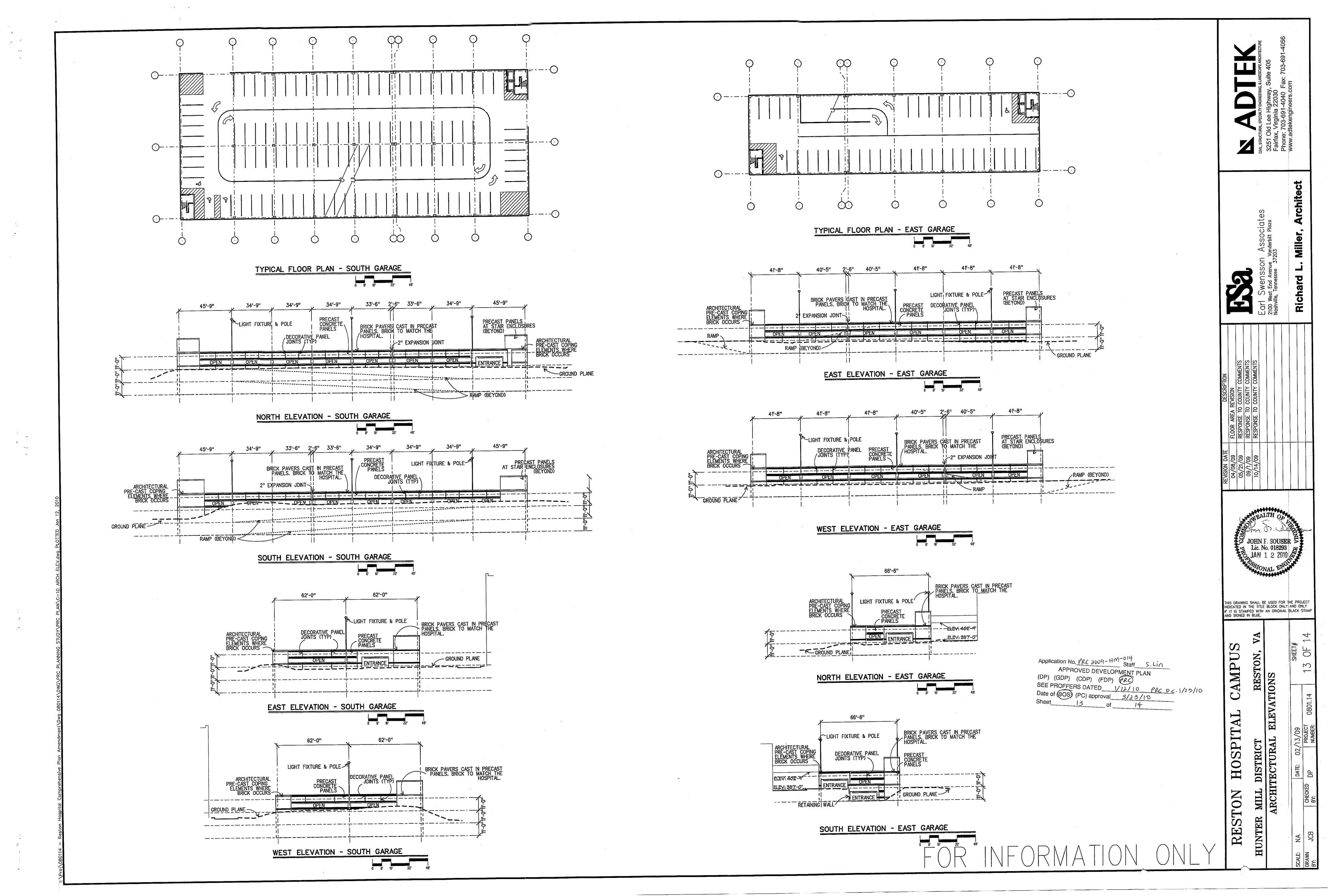
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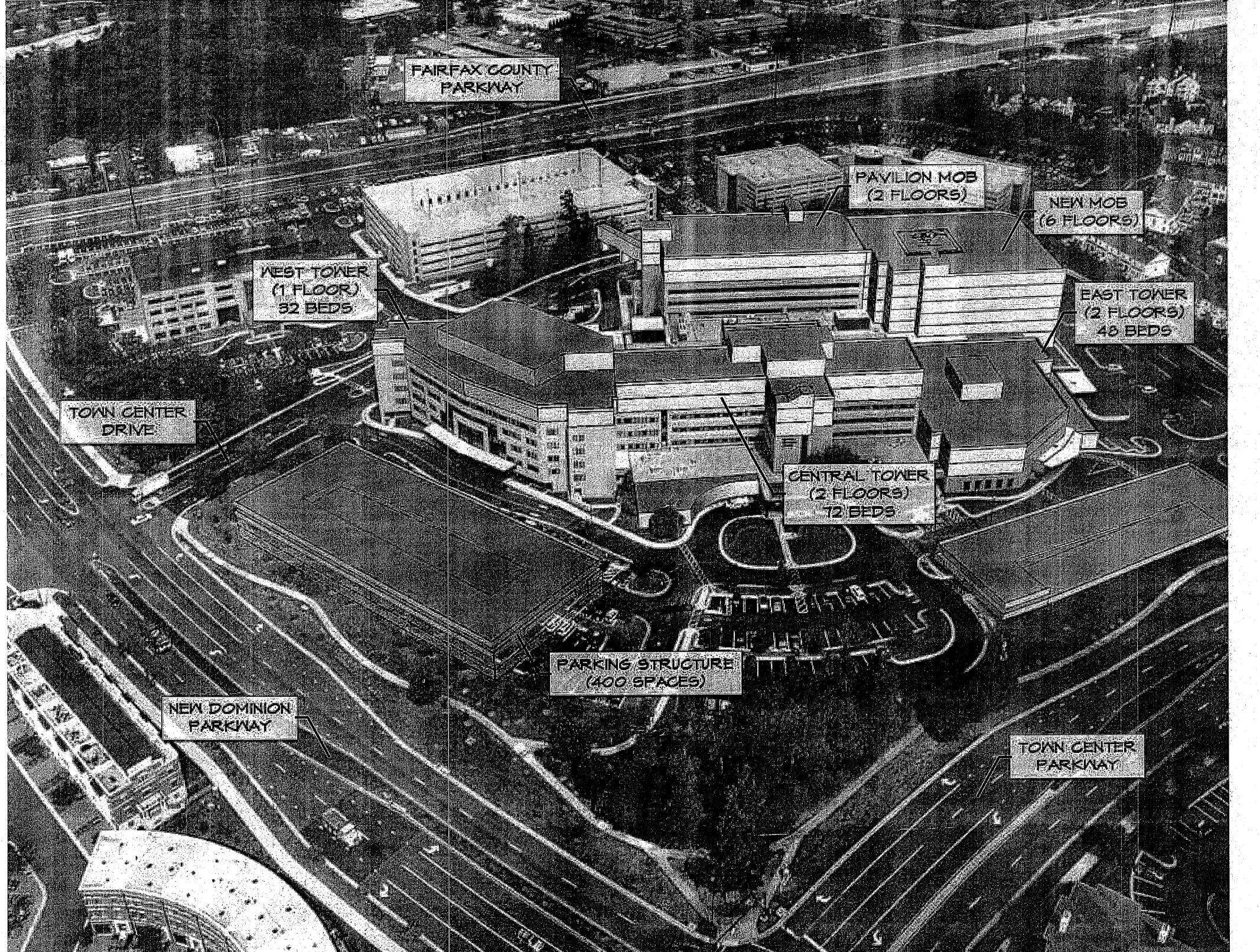
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ADEQUATE OUTFALL









Application No. PRC 2004- HM-014
Staff S.Lin

APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) PRO
SEE PROFFERS DATED 1/12/10 PRC 1/25/10
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COLOR LEGEND FUTURE FLOOR

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